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IS 12489 (1988): Recommendations for fitting terminal wire rope sockets by the cone and tail method [MED 8: Mining Techniques and Equipment]

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"पुनर्पुष्ट १९९३"
"REAFFIRMED 1993"

Indian Standard

RECOMMENDATIONS FOR FITTING TERMINAL WIRE ROPE SOCKETS BY CONE AND TAIL METHOD

(Reaffirmed 1999)

Mine Transportation Sectional Committee, EDC 91; Mine Haulages Subcommittee, EDC 91 : 4 (EDC 50 : 10) [Ref : Doc : EDC 91/50 (4795)]

1. Scope — Covers the recommendations of cone and tail method for fitting terminal wire rope sockets.

1.1 These recommendations may be used only on wire ropes of stranded construction having a hemp core.

1.2 The method is considered useful particularly for socketing on site as no heat is required.

2. Socketing Operations — Before carrying out these operations, it shall be ensured that all the requisite equipment including socket and matching cone and tail unit, seizing wire of 1·6 mm diameter and coarse seizing wires are available.

2.1 *Seizing and Cutting* — If there is a capping already on the rope, or a surplus length of rope is to be cut off, seize the rope temporarily before cutting. Fine seizing wire shall be used as the socket has to be threaded over it.

2.2 *Placing Socket on Rope* — A length of serving approximately of the same length as that of the cone and tail unit shall be left at the end of the rope (*see* portion *A* in Fig. 1). The socket shall now be threaded on the rope and pushed along out of the way. Measure from the end of the rope a distance equal to the length of the tail unit plus 12·5 mm (*see* portion *B* in Fig. 1). Mark this position as shown *C* in Fig. 1. With a piece of chalk or a light binding which leaves the abovementioned length clear. Near this mark, and at the rope end side of it, insert a *T* needle (*see* Fig. 2). Lift hemp core out and cut it near the mark (*see* Fig. 2).

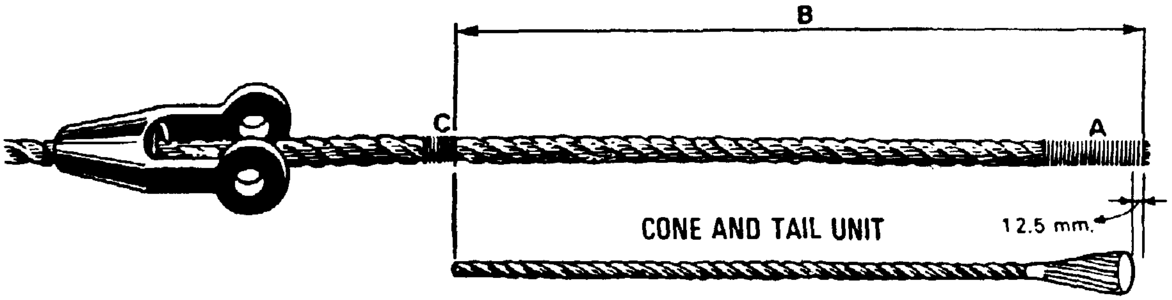

FIG. 1 MARKING FOR PLACING SOCKET ON ROPE

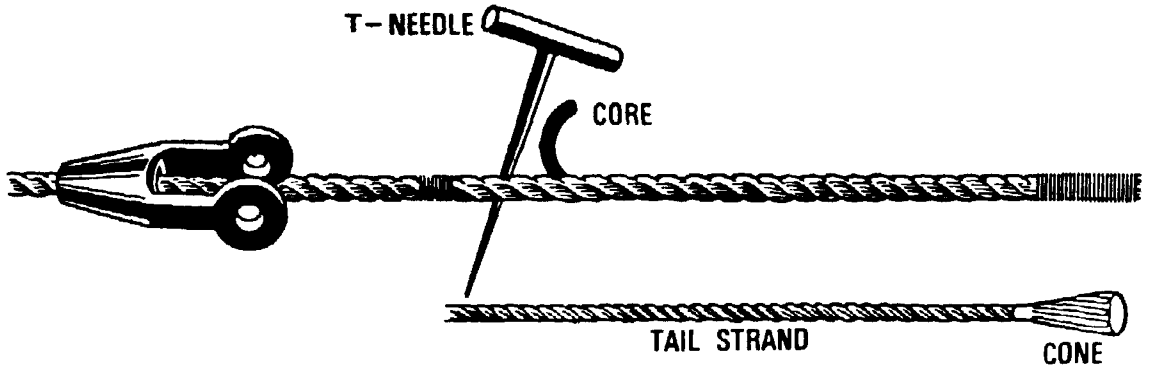

FIG. 2 HEMP CORE CUTTING

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2.3 *Removal of Hemp Core and Insertion of Tail* — For this operation, remove the severed portion of hemp core up to the serving on the end of the rope. This may be done by turning the *T* needle with the lay of the rope, at the same time pulling out the core.

2.3.1 When the *T* needle is close to the serving on the rope end, and the core has been removed to this point, insert tail of unit in the opening made by the *T* needle, and behind the needle. Push tail through the rope until the large end of the cone is about 12·5 mm short of the rope end (*see* Fig. 3). Care shall be taken that on no account the tail of the unit shall be shortened.

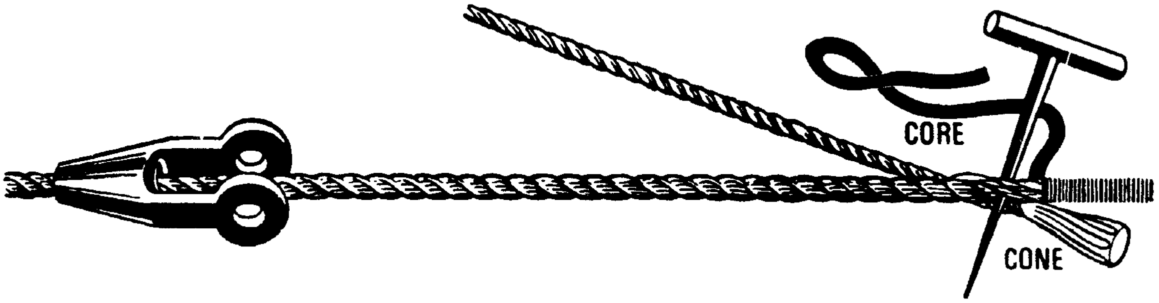

FIG. 3 REMOVAL OF HEMP CORE

2.3.2 The tail is then laid into the rope centre by working the *T* needle away from the rope end (that is, by turning it in the opposite direction to that of the rope for removing the core). When the whole length of the tail has been laid into the rope, ensure that the end of the hemp core of the rope is in contact. Pull back on the partly removed portion of the core and at a position as close as possible to it and on the side remote from the rope end, fasten a temporary but strong whipping over the rope and emerging unit (*see* Fig. 4). This whipping shall be sufficiently strong to prevent unlaying of the rope during the next operation.

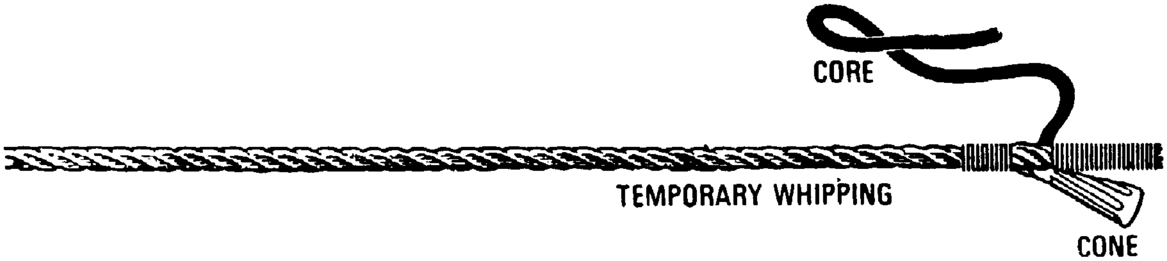

FIG. 4 WHIPPING OF ROPE

2.4 *Insertion of Cone* — Remove the original serving from the end of the rope, and pull out the served hemp core completely. Work the cone of the unit into the centre of the rope, and space the strands of the rope, one in each groove of the core. Bend the strands to follow the spiral of these grooves, if necessary. Bind the rope tightly at the small end of the cone, using fine wire of a size which shall allow the rope to pass through the small end of the socket. This binding is to prevent unlaying of the rope end (*see* Fig. 5). Remove temporary whipping shown in Fig. 4.

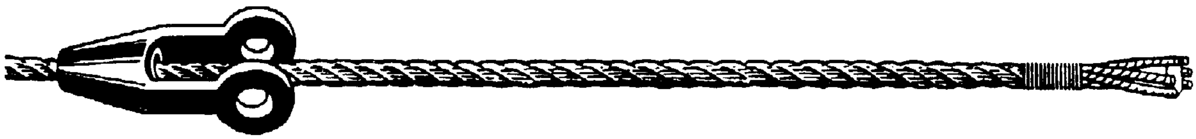

FIG. 5 BINDING OF ROPE — INSERTION OF CONE

2.5 *Drawing Socket into Position* — The socket is now pulled to the end of the rope, the cone being drawn into the barrel of the socket (*see* Fig. 6). A load equal, if possible, to the working load shall now be applied and the socket shall be drawn into its final position. After this assembly load has been applied, or preferably while that load is still on, a right seizing of soft iron single wire (not strand) shall be placed on the rope close up to end touching the mouth of the socket (*see* Fig. 7). This is to prevent socket moving on the rope. This seizing shall be in length equal to 1½ times the rope diameter and the wire used shall be of a size sufficient to prevent the socket passing over it. The starting end of this seizing shall be anchored under one strand of the rope. The assembly is then complete.

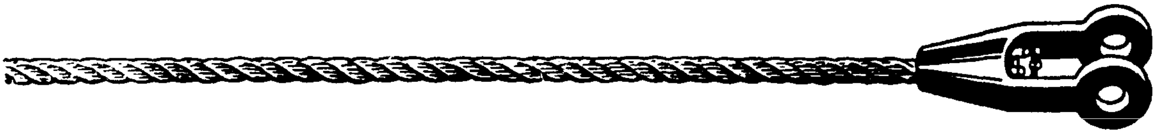

FIG. 6 DRAWING SOCKET INTO POSITION

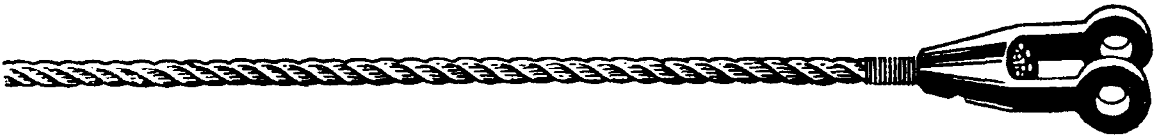

FIG. 7 SEIZING OF ROPE WITH SOFT IRON SINGLE WIRE

2.6 *Trial Run* — A trial run shall be made after which the capping shall be examined, particular attention being given to the coarse seizing at the small end of the socket.

2.6.1 If after a period of service, the seizing is no longer in contact with the socket, then seizing shall be replaced.

EXPLANATORY NOTE

This standard is an adjunct to IS : 12488-1988 'Specification for haulage rope cappels'.

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